BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
United States Patent and Trademark Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 20 April 2000 (20.04.00)	
International application No. PCT/US99/16031	**Applicant's or agent's file reference** X-12383M
International filing date (day/month/year) 15 July 1999 (15.07.99)	**Priority date** (day/month/year) 23 July 1998 (23.07.98)
Applicant HOFFMANN, James, Arthur et al	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

22 February 2000 (22.02.00)

[ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[ ] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO **34, chemin des Colombettes** **1211 Geneva 20, Switzerland**	Authorized officer C. Villet
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/16031

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A61K 38/00, 38/24
US CL :514/8, 12; 530/397, 398, 399
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/8, 12; 530/395, 397, 398, 399

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,767,067 A (ARPAIA et al) 16 June 1998, col. 10, example 3 and claims 4-10.	1-61
A	FURUHASHI, M. et al. Fusing the Carboxy-Terminal Peptide of the Chorionic Gonadotropin (CG) beta-Subunit to the Common alpha-Subunit: Retention of O-linked Glycosylation and Enhanced in Vivo Bioactivity of Chimeric Human CG. Molecular Endocrinology. 1995, Vol. 9, No. 1, pages 54-63.	1-61
X - Y	US 5,733,572 A (UNGER et al) 31 March 1998, col. 22, line 3; col. 19, line 4; col. 26, line 55 to col. 27, line 13; claims 1, 4 and 8.	1, 4, 8 --------- 2-3, 5-7, 9-61

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search	Date of mailing of the international search report
29 SEPTEMBER 1999	14 OCT 1999
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer FATEMEH T. MOEZIE Telephone No. (703) 308-0196

INTERNATIONAL SEARCH REPORT

International application No. PCT/US99/16031

B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

APS; STN; CAPLUS, Medline, Embase, Biosis

search terms: follicle stimulating hormone, FSH, variant, alpha subunit, beta subunit, infertility, preservative, phenol, phosphate buffer, isotonic, kit,

We claim:

1. A formulation comprising FSH or a FSH variant, containing an alpha and beta subunit, and a preservative selected from the group consisting of phenol, m-cresol, p-cresol, o-cresol, chlorocresol, benzyl alcohol, alkylparaben (methyl, ethyl, propyl, butyl and the like), benzalkonium chloride, benzethonium chloride, sodium dehydroacetate and thimerosal, or mixtures thereof in an aqueous diluent.

2. A formulation of Claim 1, wherein the preservative is phenol, m-cresol, chlorocresol, or a mixture thereof.

3. A formulation of Claim 2, wherein the concentration of FSH or a FSH variant is about 1.0 μg/ml to about 50 mg/ml.

4. A formulation of Claim 3, further comprising an isotonicity agent.

5. A formulation of Claim 4, further comprising a physiologically acceptable buffer.

6. A formulation comprising FSH or a FSH variant lyophilized in a first vial, and a second vial containing a preservative selected from the group consisting of phenol, m-cresol, p-cresol, o-cresol, chlorocresol, benzyl alcohol, alkylparaben (methyl, ethyl, propyl, butyl and the like), benzalkonium chloride, benzethonium chloride, sodium dehydroacetate and thimerosal, or mixtures thereof in an aqueous diluent.

7. A formulation of Claim 1, wherein said FSH or a FSH variant and preservative are in solution.

8. A formulation of Claim 1, wherein said FSH or a FSH variant is at least one compound selected from the group consisting of:

(a): α-subunit:(SEQ ID NO:1)

FPDGEFTMQGCPECKLKENKYFSKPDAPIYQCMGCCFSRAYPTPARSKKTMLVPKN
ITSEATCCVAKAFTKATVMGNVRVENHTECHCSTCYYHKS
β-subunit:(SEQ ID NO:2)
RSCELTNITITVEKEECGFCISINTTWCAGYCYTRDLVYRDPARPNIQKTCTFKEL
VYETVKVPGCAHHADSLYTYPVATECHCSKCDSDSTDCTVRGLGPSYCSFREIKE

(b):α-subunit:(SEQ ID NO:3)
FPDGEFTTQDCPECKLRENKYFFKLGVPIYQCKGCCFSRAYPTPARSRKTMLVPKN
ITSESTCCVAKAFIRVTVMGNIKLENHTQCYCSTCYHHKI
β-subunit:(SEQ ID NO:4)
NSCELTNITIAVEKEGCGFCITINTTWCAGYCYTRDLVYKDPARPNIQKTCTFKEL
VYETVKVPGCAHHADSLYTYPVATACHCGKCNSDSTDCTVRGLGPSYCSFGDMKE

(c):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:6)
NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGEMKE

(d):α-subunit:(SEQ ID NO:7)
FPDGEFTMQGCPECKLKENKYFSKLGAPIYQCMGCCFSRAYPTPARSKKTMLVPKN
ITSEATCCVAKAFTKATVMGNARVENHTECHCSTCYYHKS
β-subunit:(SEQ ID NO:8)
NSCELTNITITVEKEECNFCISINTTWCAGYCYTRDLVYKDPARPNIQKTCTFKEL
VYETVKVPGCAHHADSLYTYPVATECHCGKCDSDSTDCTVRGLGPSYCSFSEMKE

(e):α-subunit:(SEQ ID NO:9)
FPDGEFTMQGCPECKLKENKYFSKPDAPIYQCMGCCFSRAYPTPARSKKTMLVPKN
ITSEATCCVAKAFTKATVMGNVRVENHTECHCSTCYYHKS
β-subunit:(SEQ ID NO:10)
RSCELTNITITVEKEECSFCISINTTWCAGYCYTRDLVYKDPARPNIQKACTFKEL
VYETVKVPGCAHHADSLYTYPVATECHCGKCDRDSTDCTVRGLGPSYCSFSDIRE

(f):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:11)
NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGE

(g):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:12)
NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGEM

(h):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:13)
NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGEMK

9. A method of treating infertility which comprises administering to a patient in need thereof a formulation according to Claim 1.

10. A method of Claim 9, wherein said patient is selected from the group consisting of a human, sheep, cow, pig, horse, or rabbit.

11. A process for preparing a preserved solution formulation of FSH or a FSH variant, containing an alpha and beta subunit, which comprises admixing said FSH or a FSH variant and a preservative selected from the group consisting of phenol, m-cresol, p-cresol, o-cresol, chlorocresol, benzyl alcohol, alkylparaben (methyl, ethyl, propyl, butyl and the like), benzalkonium chloride, benzethonium chloride, sodium dehydroacetate and thimerosal, or mixtures thereof, in an aqueous diluent.

12. An article of manufacture for human pharmaceutical use, comprising packaging material and a vial comprising a solution of FSH or a FSH variant, containing an alpha and beta subunit, and a preservative solution, wherein said packaging material comprises a label which indicates that said solution may be held over a period of 24 hours or greater.

13. The article of manufacture of Claim 12, wherein said vial is a glass container having a stopper for multi-use administration.

14. The article of manufacture of Claim 12, wherein said vial is a blister pack, capable of being punctured and used in pulmonary administration.

15. The article of manufacture of Claim 12, wherein said vial is a pen-injector device.

16. An article of manufacture, comprising packaging material, a first vial comprising lyophilized FSH or a FSH variant, containing an alpha and beta subunit, and a second vial comprising a preservative solution, wherein said packaging material comprises a label which instructs a patient to reconstitute the said lyophilized FSH or a FSH variant in the preservative solution for use over a period of of 24 hours or greater.

17. The article of manufacture of Claim 16, wherein said first vial and said second vial are embodied in a pen-injector device.

18. A method of treating infertility in a patient, which comprises administering to a patient in need thereof a preserved solution of FSH or a FSH variant, containing an alpha and beta subunit, in an preserved solution, said solution being suitable for administration over a period of 24 hours or greater.

19. A method of using a stable solution of FSH or a FSH variant, containing an alpha and beta subunit to treat infertility in a patient, which comprises administering to a patient in need thereof a solution of FSH or a FSH variant in a stable solution, said solution being suitable for administration over a period of 24 hours or greater.

20. The use of at least one alpha or beta polypeptide of a FSH or a FSH variant in the preparation of a preserved formulation adapted for administration over a period of 24 hours or greater.

21. A stable formulation comprising at least one FSH or a FSH variant, containing an alpha and beta subunit, and phosphate buffer containing saline or a salt, wherein said FSH or a FSH variant comprises at least 90% FSH or a FSH variant dimers after 60 days at 23°C.

22. A formulation of Claim 21, wherein the concentration of said FSH or a FSH variant is about 1.0 μg/ml to about 50 mg/ml.

23. A formulation of Claim 21, further comprising an isotonicity agent.

24. A formulation of Claim 21, wherein said buffer is phosphate buffered saline.

25. A formulation comprising a first vial containing a lyophilized FSH or a FSH variant containing an alpha and beta subunit, and a second vial containing phosphate buffer containing saline or a salt.

26. A formulation of Claim 21, wherein said FSH or a FSH variant and said phosphate buffer are in solution.

27. A formulation of Claim 21, wherein said FSH or a FSH variant is at least one compound selected from the group consisting of:

(a): α-subunit:(SEQ ID NO:1)
FPDGEFTMQGCPECKLKENKYFSKPDAPIYQCMGCCFSRAYPTPARSKKTMLVPKN
ITSEATCCVAKAFTKATVMGNVRVENHTECHCSTCYYHKS
β-subunit:(SEQ ID NO:2)
RSCELTNITITVEKEECGFCISINTTWCAGYCYTRDLVYRDPARPNIQKTCTFKEL
VYETVKVPGCAHHADSLYTYPVATECHCSKCDSDSTDCTVRGLGPSYCSFREIKE

(b):α-subunit:(SEQ ID NO:3)
FPDGEFTTQDCPECKLRENKYFFKLGVPIYQCKGCCFSRAYPTPARSRKTMLVPKN
ITSESTCCVAKAFIRVTVMGNIKLENHTQCYCSTCYHHKI
β-subunit:(SEQ ID NO:4)
NSCELTNITIAVEKEGCGFCITINTTWCAGYCYTRDLVYKDPARPNIQKTCTFKEL
VYETVKVPGCAHHADSLYTYPVATACHCGKCNSDSTDCTVRGLGPSYCSFGDMKE

(c):α-subunit:(SEQ ID NO:5)

APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:6)
NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGEMKE

(d):α-subunit:(SEQ ID NO:7)
FPDGEFTMQGCPECKLKENKYFSKLGAPIYQCMGCCFSRAYPTPARSKKTMLVPKN
ITSEATCCVAKAFTKATVMGNARVENHTECHCSTCYYHKS
β-subunit:(SEQ ID NO:8)
NSCELTNITITVEKEECNFCISINTTWCAGYCYTRDLVYKDPARPNIQKTCTFKEL
VYETVKVPGCAHHADSLYTYPVATECHCGKCDSDSTDCTVRGLGPSYCSFSEMKE

(e):α-subunit:(SEQ ID NO:9)
FPDGEFTMQGCPECKLKENKYFSKPDAPIYQCMGCCFSRAYPTPARSKKTMLVPKN
ITSEATCCVAKAFTKATVMGNVRVENHTECHCSTCYYHKS
β-subunit:(SEQ ID NO:10)
RSCELTNITITVEKEECSFCISINTTWCAGYCYTRDLVYKDPARPNIQKACTFKE
LVYETVKVPGCAHHADSLYTYPVATECHCGKCDRDSTDCTVRGLGPSYCSFSDIR
E

(f):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:11)
NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGE

(g):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:12)
NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGEM

(h):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:13)

NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGEMK

28. A method of treating infertility which comprises administering to a patient in need thereof a formulation according to Claim 21.

29. A method of Claim 28, wherein said patient is selected from the group consisting of a human, sheep, cow, pig, horse, or rabbit.

30. A process for preparing a stable solution formulation of FSH or a FSH variant, containing an alpha and beta subunit, which comprises admixing a FSH or a FSH variant in phosphate buffer containing saline or a salt.

31. An article of manufacture for pharmaceutical use, comprising packaging material and a vial comprising a stable solution of FSH or a FSH variant, containing an alpha and beta subunit, in an aqueous diluent, wherein said packaging material comprises a label which indicates that such solution is suitable for use over a period of 24 hours or greater.

32. The article of manufacture of Claim 31, wherein said vial is a glass container having a stopper for multi-use administration.

33. The article of manufacture of Claim 31, wherein said vial is a blister pack, capable of being punctured and used in pulmonary administration.

34. The article of manufacture of Claim 31, wherein said vial is a pen-injector device.

35. An article of manufacture, comprising packaging material, a first vial comprising a lyophilized FSH or a FSH variant containing, an alpha and beta subunit, and a second vial comprising a stable aqueous diluent, wherein said packaging material comprises a label which instructs a patient to reconstitute said FSH or a FSH variant in the aqueous diluent to form a solution that is suitable for use over a period of 24 hours or greater.

36. The article of manufacture of Claim 35, wherein said first vial and said second vial are embodied in a pen-injector device.

37. A method of treating infertility in a patient, which comprises administering to a patient in need thereof a stable solution of FSH or a FSH variant, containing an alpha and beta subunit, in an aqueous phosphate buffered diluent, said solution being suitable for administration over a period of 24 hours or greater.

38. A method of using a solution FSH or a FSH variant, containing an alpha and beta subunit, to treat infertility in a patient, which comprises administering to a patient in need thereof a stable solution of FSH or a FSH variant in an aqueous diluent suitable for use over a period of 24 hours or greater.

39. The use of at least one polypeptide of a FSH or a FSH variant in the preparation of a stable formulation adapted for administration over a period of 24 hours or greater.

40. A formulation as described herein.

41. An article of manufacture as described herein

42. A process as described herein.

43. A use as described herein.

44. A method as described herein.

45. Use of a formulation of claim 1 for treating infertility in a patient in need thereof.

46. Use of a formulation of claim 1 wherein said patient is selected from the group consisting of a human, sheep, cow, pig, horse, or rabbit.

47. Use of a preserved solution of FSH or a FSH variant, containing an alpha and beta subunit, to treat infertility in a patient in need thereof, said solution being suitable for administration over a period of 24 hours or greater.

48. Use of a stable solution of FSH or a FSH variant, containing an alpha and beta subunit, to treat

infertility in a patient, which comprises administering to a patient in need thereof a solution of said FSH or a FSH variant in a phosphate buffer, containing saline or a salt, over a period of 24 hours or greater.

49. Use of a formulation of Claim 21 for treating infertility in a patient in need thereof.

50. A use of Claim 49 wherein said patient is selected from the group consisting of a human, sheep, cow, pig, horse, or rabbit.

51. Use of stable stable solution of purified FSH or a FSH variant, containing an alpha and beta subunit, in a phosphate buffer containing saline or a salt suitable for administration over a period of 24 hours or greater for treating infertility in a patient in need thereof.

52. Use of a stable solution FSH or a FSH variant, containing an alpha and beta subunit, to treat infertility in a patient in need thereof, wherein said stable solution of said FSH or a FSH variant in phosphate buffer containing saline or a salt is suitable for use over a period of 24 hours or greater.

53. A process of producing a formulation comprising admixing FSH or a FSH variant, containing an alpha and beta subunit, and a preservative selected from the group consisting of phenol, m-cresol, p-cresol, o-cresol, chlorocresol, benzyl alcohol, alkylparaben (methyl, ethyl, propyl, butyl and the like), benzalkonium chloride, benzethonium chloride, sodium dehydroacetate and thimerosal, or mixtures thereof in an aqueous diluent.

54. A process of producing a stable formulation comprising admixing at least one FSH or a FSH variant, containing an alpha and beta subunit, and a phosphate buffer containing saline or a salt, wherein said FSH or a FSH variant comprises at least 90% FSH or a FSH variant dimers after 60 days at 23°C.

55. A process of Claim 53, wherein the preservative is phenol, m-cresol, chlorocresol, or a mixture thereof.

56. A process according to any of Claims 53-54, wherein the concentration of FSH or a FSH variant is about 1.0 µg/ml to about 50 mg/ml.

57. A process according to any of Claims 53-54, further admixing an isotonicity agent.

58. A process of Claim 53-54, further admixing a physiologically acceptable buffer.

59. A process comprising preparing a FSH or a FSH variant lyophilized in a first vial, and preparing a second vial containing a preservative selected from the group consisting of phenol, m-cresol, p-cresol, o-cresol, chlorocresol, benzyl alcohol, alkylparaben (methyl, ethyl, propyl, butyl and the like), benzalkonium chloride, benzethonium chloride, sodium dehydroacetate and thimerosal, or mixtures thereof in an aqueous diluent.

60. A process of Claim 59, wherein said FSH or a FSH variant and preservative are further put into solution.

61. A process according to any of claims 53-54, wherein said FSH or a FSH variant is at least one compound selected from the group consisting of:

(a): α-subunit:(SEQ ID NO:1)
FPDGEFTMQGCPECKLKENKYFSKPDAPIYQCMGCCFSRAYPTPARSKKTMLVPKN
ITSEATCCVAKAFTKATVMGNVRVENHTECHCSTCYYHKS
β-subunit:(SEQ ID NO:2)
RSCELTNITITVEKEECGFCISINTTWCAGYCYTRDLVYRDPARPNIQKTCTFKEL
VYETVKVPGCAHHADSLYTYPVATECHCSKCDSDSTDCTVRGLGPSYCSFREIKE

(b):α-subunit:(SEQ ID NO:3)
FPDGEFTTQDCPECKLRENKYFFKLGVPIYQCKGCCFSRAYPTPARSRKTMLVPKN
ITSESTCCVAKAFIRVTVMGNIKLENHTQCYCSTCYHHKI
β-subunit:(SEQ ID NO:4)
NSCELTNITIAVEKEGCGFCITINTTWCAGYCYTRDLVYKDPARPNIQKTCTFKEL
VYETVKVPGCAHHADSLYTYPVATACHCGKCNSDSTDCTVRGLGPSYCSFGDMKE

(c):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:6)
NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGEMKE

(d):α-subunit:(SEQ ID NO:7)
FPDGEFTMQGCPECKLKENKYFSKLGAPIYQCMGCCFSRAYPTPARSKKTMLVPKN
ITSEATCCVAKAFTKATVMGNARVENHTECHCSTCYYHKS
β-subunit:(SEQ ID NO:8)
NSCELTNITITVEKEECNFCISINTTWCAGYCYTRDLVYKDPARPNIQKTCTFKEL
VYETVKVPGCAHHADSLYTYPVATECHCGKCDSDSTDCTVRGLGPSYCSFSEMKE

(e):α-subunit:(SEQ ID NO:9)
FPDGEFTMQGCPECKLKENKYFSKPDAPIYQCMGCCFSRAYPTPARSKKTMLVPKN
ITSEATCCVAKAFTKATVMGNVRVENHTECHCSTCYYHKS
β-subunit:(SEQ ID NO:10)
RSCELTNITITVEKEECSFCISINTTWCAGYCYTRDLVYKDPARPNIQKACTFKEL
VYETVKVPGCAHHADSLYTYPVATECHCGKCDRDSTDCTVRGLGPSYCSFSDIRE

(f):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:11)
NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGE

(g):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:12)
NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGEM

(h):α-subunit:(SEQ ID NO:5)
APDVQDCPECTLQENPFFSQPGAPILQCMGCCFSRAYPTPLRSKKTMLVQKNVTSE
STCCVAKSYNRVTVMGGFKVENHTACHCSTCYYHKS
β-subunit:(SEQ ID NO:13)

NSCELTNITIAIEKEECRFCISINTTWCAGYCYTRDLVYKDPARPKIQKTCTFKEL
VYETVRVPGCAHHADSLYTYPVATQCHCGKCDSDSTDCTVRGLGPSYCSFGEMK

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	**ES**	Spain	**LS**	Lesotho	**SI**	Slovenia
AM	Armenia	**FI**	Finland	**LT**	Lithuania	**SK**	Slovakia
AT	Austria	**FR**	France	**LU**	Luxembourg	**SN**	Senegal
AU	Australia	**GA**	Gabon	**LV**	Latvia	**SZ**	Swaziland
AZ	Azerbaijan	**GB**	United Kingdom	**MC**	Monaco	**TD**	Chad
BA	Bosnia and Herzegovina	**GE**	Georgia	**MD**	Republic of Moldova	**TG**	Togo
BB	Barbados	**GH**	Ghana	**MG**	Madagascar	**TJ**	Tajikistan
BE	Belgium	**GN**	Guinea	**MK**	The former Yugoslav Republic of Macedonia	**TM**	Turkmenistan
BF	Burkina Faso	**GR**	Greece			**TR**	Turkey
BG	Bulgaria	**HU**	Hungary	**ML**	Mali	**TT**	Trinidad and Tobago
BJ	Benin	**IE**	Ireland	**MN**	Mongolia	**UA**	Ukraine
BR	Brazil	**IL**	Israel	**MR**	Mauritania	**UG**	Uganda
BY	Belarus	**IS**	Iceland	**MW**	Malawi	**US**	United States of America
CA	Canada	**IT**	Italy	**MX**	Mexico	**UZ**	Uzbekistan
CF	Central African Republic	**JP**	Japan	**NE**	Niger	**VN**	Viet Nam
CG	Congo	**KE**	Kenya	**NL**	Netherlands	**YU**	Yugoslavia
CH	Switzerland	**KG**	Kyrgyzstan	**NO**	Norway	**ZW**	Zimbabwe
CI	Côte d'Ivoire	**KP**	Democratic People's Republic of Korea	**NZ**	New Zealand		
CM	Cameroon			**PL**	Poland		
CN	China	**KR**	Republic of Korea	**PT**	Portugal		
CU	Cuba	**KZ**	Kazakstan	**RO**	Romania		
CZ	Czech Republic	**LC**	Saint Lucia	**RU**	Russian Federation		
DE	Germany	**LI**	Liechtenstein	**SD**	Sudan		
DK	Denmark	**LK**	Sri Lanka	**SE**	Sweden		
EE	Estonia	**LR**	Liberia	**SG**	Singapore		